

PENSION PROGRAM FOR THE WELFARE OF OLDER ADULTS AND RURAL POVERTY IN THE STATE OF PUEBLA

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ABSTRACT

Given the growing number of people aged 65 years or older in vulnerable situations in Mexico, the Pension for the Well-being of Older Adults (PPBAM) program was implemented in 2018. This research was designed to analyze the relationship between the PPBAM and the situation of poverty and deprivation among the population over 65 years of age, in rural and urban areas of the State of Puebla. Using data from the National Council for the Evaluation of Social Development Policy (CONEVAL) and a Probit model, we estimated for the probability that older adults living in conditions of poverty, both with and without the program's transfers, identifying patterns and differences between urban and rural areas, as well as between men and women. Results indicate that the PPBAM in the State of Puebla significantly influenced the probability that the population over 65 years of age lives in conditions of poverty (8.4%), revealing differentiated effects between urban (7.9%) and rural (9.7%) areas. The program coverage is higher in rural areas (24%) than in urban areas (21%), however, rural areas continue to present greater deficiencies in terms of food, health, education, social security, quality and housing spaces. Regarding gender allocation, women represent 56% of beneficiaries, which reduces their probability of falling into poverty by 8.8%. In conclusion, although the PPBAM has reduced poverty among the population over 65 years of age, especially among rural women, poverty and extreme poverty continue to affect this population group, so we recommend reevaluating the distribution and prioritization of support, particularly in terms of social deficiencies that have not yet been resolved.

Keywords: labor rights, social policy, social security.

INTRODUCTION

Population structure on a global scale has changed, derived from a decrease in mortality and birth rates and an increase in life expectancy; the World Health Organization (WHO, 2022) mentions that the number of people aged 60 years or older exceeded that of children under 5 years of age, showing that the rate the population is aging exceeds that of the past, predicting that by 2050, 80% of people over 60 years of age will live in countries with lower incomes. It was also estimated that, from 2015 to 2030, the population of 60 years of age will increase by 64% but this will occur in a differentiated way, Europe will

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continue to be the oldest region in the world; while Latin America and the Caribbean will experience a period of accelerated aging, similar to Mexico, with fertility rates close to replacement rates and a life expectancy exceeding the regional average (Huenchuan, 2018).

In Mexico, 12% of the population (15.1 million people) is 60 years of age or older, that is, for every 100 children under 15 years of age, there are 48 elderly adults (National Institute of Statistics and Geography-INEGI, 2021). According to the National Council for the Evaluation of Social Development Policy (CONEVAL, 2020), there are 35.7 million households in the country, of which (25.3%) houses at least one person aged 65 or older and of these households, for 8 out of 10 in this population group, the head of the household was resident, with predominantly an extended family structure (41.2%) but with 17.5%, manifesting a single-person structure.

Notably, of the country's population over 65 years of age (10.3 million people), a higher percentage are women (54.4%), who do not usually have access to a work pension, 22.9% of these live in rural areas and 9.5% are indigenous (CONEVAL, 2020); this complicates their capacity to fulfill their needs at this stage of their life. This demographic change is occurring in a differentiated way throughout the country. In 2020, Mexico City had the highest proportion of people over 60 years of age (16.2%), whereas in Puebla it was lower (12.2%). It is estimated that in 30 years' time, the percentage in Puebla will increase to 21%, especially in the 9 municipalities (4.1%) that present aging rates that exceed 30%, as opposed to 34 municipalities (15.7%) with rates under 10% (Garay and Calderón, 2023).

The increase in the population over 65 years of age generates economic, social and health pressures, to such an extent that the country's social policy was overhauled to serve this demographic sector through social programs, whose antecedents date back to 2001. In what was then the Federal District (Mexico City), the program, whose objective was to provide a non-contributory pension (Pintado, 2021), became a priority through the food support program, medical care and free medication for older adults, for residents in this government space. In 2003, these rights were recognized by the Law that establishes the right to food pension for adults over sixty-eight years of age, who reside in this government context (Mexico City, Congress, 2003).

This program evolved and expanded from its nationwide initiation. In 2007, the Program for the Care of Senior Citizens, Aged 70 and Over was implemented in localities with fewer than 2,500 residents; in 2008, in places with 20,000 inhabitants; and in 2009, up to 30,000 inhabitants (Secretariat of Social Development-SEDESOL, 2012). In 2013, this was named the Pension for Senior Citizens (PAM), directed towards people over 65 years of age, who did not receive income from the payment of any type of retirement policy (Official

Gazette of the Federation-DOF, 2013). As of 2019, it became the “Pension for the Well-being of Older Adults” (PPBAM), granting an initial support of \$1,275.00 per month, delivered bi-monthly (DOF, 2019). Currently (2024), it amounts to \$3,000.00 (DOF, 2023), and focuses on indigenous, Afro-Mexican, women, people with disabilities or depending on location of residence, in an attempt to reduce the gaps caused by socioeconomic inequality (DOF, 2023). This research aims to analyze the relationship between PPBAM and poverty in rural areas in the State of Puebla, in order to provide feedback to the program, for the generation of schemes that allow the formulation of social policy strategies, contributing to the reduction of poverty in the medium term. Evaluating the relationship of programs such as PPBAM in terms of poverty reduction and improved living conditions is crucial to determining their effectiveness, justifying their continuity and optimizing their implementation. This study offers an empirical evaluation of PPBAM in terms of reducing poverty in rural areas of Puebla, contributing to understanding regional and socioeconomic differences, concerning the influence of the program, especially in rural communities, where needs may differ from those in urban areas.

THEORETICAL FRAMEWORK

Poverty is a multidimensional problem that is difficult to analyze because it depends on the researcher’s perception, the context, the thresholds considered, among other factors, which means that there is no single definition; however, we can affirm that it is a social phenomenon, reflected in the lack of material conditions to cover basic needs, related to food, clothing, housing, education and health. Likewise, it also refers to subjective aspects of perception and dissatisfaction, which occur when a person cannot fulfill the expectations established by social norms (Kalinowski, 2020).

There are different approaches to measuring poverty, which can be characterized, depending on whether they base their criteria on setting standards (thresholds or levels) that separate the poor from the non-poor in absolute terms, or whether they adopt a relative view, considering socially established needs, which may vary depending on the context and time; others refer to a unidimensional (a single dimension) or multidimensional (several dimensions) of well-being (Boltvinik and Damián, 2020). The absolute poverty approach places emphasis on the minimum material conditions of subsistence, enabling thresholds to be defined and which is questionable, as it limits human needs to the physical, as opposed to the social; however, the advantage of this approach is that it allows for simple and direct measurement, in order to compare people’s income (Stezano, 2021).

In Mexico, two thresholds are calculated to measure poverty: the first defines extreme poverty, by estimating the cost of the basic food basket, which

considers the contributions, requirements and recommendations of nutrients in food consumed, as well as expenditure and frequency of consumption, by household. Whilst in the second, reference is made to income poverty, defining it in terms of a basic basket, including both food and non-food; both these thresholds are adjusted for urban and rural areas (CONEVAL, 2019). These methodologies are not unique, for example, in the European Union, a parametric approach is used, which is set at 60% of the median disposable income after social transfers, using an equivalence scale, meaning that income is adjusted according to household size (Kalinowski, 2020).

By defining the thresholds, an estimate of absolute poverty can be obtained, indicating the total population that is below the established income level or the proportion of people with income below the threshold (Martner, 2018). In contrast, relative poverty considers the dispersion of income/wealth with respect to an average social standard, which changes over time, as it is dynamic in character (Stezano, 2021).

In this research, we assumed the poverty approach established by CONEVAL (2019), which is based on the definition of absolute poverty, although we took a multidimensional approach to its measurement, considering various aspects, such as lack of education, health, housing, housing services, food and social security; thus making it possible to identify not only the levels, but also the intensity of poverty, based on the proportion of deficiencies experienced (Alkire and Foster, 2011). Thus, multidimensional poverty considers both economic well-being and social deficiencies, indicating that a person is in a situation of poverty, when they have at least one social deficiency and do not have sufficient income to satisfy their needs, and in a situation of extreme poverty, when they suffer from three or more social deficiencies and do not have sufficient income to purchase a basic food basket (CONEVAL, 2019).

Regardless of the way it is measured, poverty has different nuances, according to demographic and spatial diversification, which enable establishing differences in its level and intensity (Stezano, 2021). An obvious case is that occurring in dispersed rural areas, where there are low levels of income and population density, with a high rate of aging, which makes it more difficult and expensive to maintain an adequate infrastructure providing comprehensive services (Economic Commission for Europe-UNECE, 2017), as these areas are characterized by rugged terrain, roads, poor physical infrastructure and transportation, which not only limits access to services, but also creates barriers to maintaining social relationships, accentuating the social exclusion of older adults (Centre for Ageing Better, 2021), which can lead to mental health problems, such as depression and anxiety.

Thus, the relationship between rural areas, old age and health is complex, as it not only represents a problem of access, but also concerning quality

of services, because these spaces are characterized by a shortage of doctors and technological limitations, which affect the options for care, diagnosis and treatment (Cohen, 2023). This situation is aggravated, considering that among this population, chronic diseases and functional deterioration prevail; factors requiring different care compared to other age groups. Added to this are financial, educational and cultural barriers, which hinder access to health services (Barbosa *et al.*, 2024).

Furthermore, poor working conditions and the aging process of the population reduce the possibility of accessing contributory pensions, in the long term depressing the quality of life expectations of the of the older adult population and above all, due to the uncertainty of having sufficient income to enable their subsistence. This lack of adequate social protection systems is thus compensated by the family safety net; however, current living conditions in rural areas have changed significantly, not only due to migration, but also due to changes in family structures, which have reduced co-residence, increasing the vulnerability of older people (United Nations, 2018).

In this situation, rural poverty among older women is more intense, not only because of their greater participation in unpaid work, which reduces their likelihood of accessing social benefits, but also because of a structural subordination of economic dependence, which causes their subsistence to depend on the support they receive from others (Castañeda and Rebolledo, 2019). Given the seriousness of this context, governments in Latin America, such as Argentina, Brazil, Chile, Colombia, Bolivia and Mexico, created a non-contributory pension system as an essential component of social security and, in some cases, added a universal character, thereby enabling the reduction of gender gaps and the institutionalization of the rights to old-age protection for all, especially for people without access to the formal labor market (Arza, 2017).

Rodríguez (2016) comments that poverty among older adults is critical, despite obtaining economic resources from social programs and this is more noticeable among people who live in rural areas, especially if they belong to an ethnic group. Here, pensions, including both contributory and non-contributory systems become relevant, and the social functions that an old-age pension system should provide include curtailing or alleviating poverty and indigence, as well as income redistribution to reduce inequalities and exclusion and maintaining consumption levels, in order to satisfy minimum needs, based on the stage of life (Rodríguez, 2016). These functions can be generated with different combinations of income support models (Filgueira and Manzi, 2017).

Here, non-contributory pension systems play a crucial role in reducing the social and economic risks related to old age, providing a basic income that

helps ensure a minimum level of consumption and guaranteeing coverage of the right to social security (Martínez, Pérez and Tejerina, 2015), while generating an income effect that drives aggregate demand in the economy. Besides this, they have significant impact on the physical and mental health of beneficiaries; as by reducing economic insecurity, they decrease stress and anxiety. This means that with higher incomes, beneficiaries can access better medical care, buy medicines and adopt healthier lifestyles, reducing the risks derived from labor participation (Bando, Galiani and Gertler, 2021). The benefits of non-contributory pensions also extend to other members of the family. In particular, a positive relationship has been observed between these pensions and education, as there is a higher enrolment rate among children. Despite this, notably, the income generated by one or more pensions in a household may not modify poverty levels if household size increases, as benefits from pensions will be shared with the extended family (Borrella-Mas *et al.*, 2016).

METHODOLOGY

To carry out the research, information was used from the database for the Multidimensional Poverty Measurement published by CONEVAL, with data from 2020, which provides information on socioeconomic conditions, poverty and deprivation per person and per household, establishing information about people as the unit of analysis. In the processing of the information, a variable called target population was generated, to identify the population that was 65 years of age or older, making it possible to analyze the proportion of the population aged 65 years or older that receives support.

The information was analyzed by groups, specifically considering gender and geographic differences (urban/rural) in order to identify specific groups for whom the program may have greater or lesser influence. The population living in poverty was considered to be those with an income below the poverty line, by income for rural and urban areas, and who suffer from at least one social deprivation. In turn, the population living in extreme poverty was considered as those who have an income that does not allow them access to the basic food basket, in addition to presenting at least three of the six aspects of social deprivation.

To analyze deficiencies and vulnerabilities, we used the CONEVAL methodology for multidimensional poverty measurement (2019).

In order to evaluate the relationship between program transfers and the probability of being in poverty, we applied a Probit model to the population aged 65 years or older in the State of Puebla, as the dependent variable, poverty, is dichotomous; the suitability of this model was confirmed by the pseudo R^2 , which allowed its fit to be evaluated. The proposed model is as follows:

$$Poverty = \Phi(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon_i)$$

where Φ is the cumulative distribution function of the standard normal distribution; β_0 is the intercept; X_1 dichotomous variable indicating whether the area is rural (1) or urban (0); X_2 is the dichotomous variable indicating male gender (1) or female gender (0); X_3 is the dichotomous variable, indicating whether they receive PPBAM support, being a beneficiary (1) and not a beneficiary (0); X_4 is the dichotomous variable, indicating whether or not the person receives a work pension; receives (1) does not receive (0); X_5 is the categorical variable, indicating educational level, consisting of incomplete primary or less (0), complete primary or incomplete secondary (1), complete secondary or incomplete upper secondary (2), and complete upper secondary or higher educational level (3); X_6 is the continuous variable, referring to age; X_7 is the continuous variable, measuring adjusted household size.

The estimate for the proposed model was carried out using robust standard errors to address problems of heteroscedasticity; this helps obtain more precise confidence intervals and more reliable significance tests for the coefficients (Wooldridge, 2010).

In order to interpret the Probit model, marginal effects analyses were carried out to assess the probability of being in poverty, depending on whether or not PPBAM transfers were received, in both rural and urban areas. Besides this, the first difference method was implemented to capture changes concerning the probability of being in poverty, whether or not support from the program was received, both by area and by gender.

RESULTS

The average age of older adults nationwide was 74 years, which is equivalent to 9.4% of the total sample, and of this percentage, 21% received support from the PPBAM. In the case of Puebla, it was found that, out of the total population (6.6 million people), 9% was over 65 years old (568,812 people), of which 22% received support (122,862 people), having an average age similar to the national average. Regarding the distribution of the PPBAM in the country, 33% of the resources were concentrated in rural areas, with 24% coverage, compared to 21% in urban areas. Coverage varied between states, with the lowest levels in Baja California (11.7%) and the State of Mexico (12%), whereas Nayarit (29.8%) and Sinaloa (27.8%) had the highest coverage. The average coverage nationwide was 22%; a percentage resembled that of the State of Puebla (22%).

Of the total PPBAM resources distributed throughout the State of Puebla, 70% were allocated to urban areas and 30% to rural areas, which translates to coverage of 21% in urban areas, in contrast to rural areas, where a higher proportion was achieved (24%). Regarding the allocation of PPBAM by gender, it was observed that more of the beneficiaries were women (56%), a phenomenon that occurs in Mexico, both in rural areas (51% women) and urban areas (59% women). In the case of Puebla, it was observed that the PPBAM resources assigned to women in rural areas was 54%, compared to 67.46% in urban areas. This disparity may be due to differences in terms of access to work-related pensions, where it was found that in urban areas, 17% of women received a pension, compared to 29% of men; a completely different situation to that found in rural areas, where both women (7%) and men (9%) have very limited access to work-related pensions.

Regarding poverty conditions in the State (Table 1), evidently the concentration is higher in rural areas (70%) than in urban areas (59%); a similar pattern was found among the population over 65 years of age, where poverty in rural areas (61%) was higher than in urban areas (50%). Notably, the amount of people aged 65 and over in poverty conditions was lower in rural areas than in urban areas; however, the percentage of the population in this condition, benefited by the program in rural areas was similar (52%) to that of urban areas (51%).

Of the population living in poverty aged 65 years and older, broken down by gender, it was found that in rural areas, 49% of women and 55% of men benefited. Meanwhile, in urban areas, PPMAM support reached 52% of women and 48% of men, who live in poverty. Although poverty is a serious problem, extreme poverty worsens the situation even more, violating fundamental rights and people's quality of life. In this sense, it was found that extreme

Table 1. Poverty conditions of the population, according to type of location in Puebla, 2020.

Level	Characteristics	Poverty (%)	Extreme poverty (%)	Vulnerable to social deficiencies (%)	Vulnerable because of income level (%)	Not poor and not vulnerable (%)
State	General	62	13	18	8	13
	Over 65 years	53	12	22	7	17
	PPBAM	51	7	27	7	15
	No PPBAM	54	14	21	7	18
Urban	General	59	12	16	10	15
	Over 65 years	50	12	18	10	22
	PPBAM	51	7	20	10	19
	No PPBAM	50	13	17	10	23
Rural	General	70	16	23	2	4
	Over 65 years	61	14	33	0	6
	PPBAM	52	7	42	0	6
	No PPBAM	64	16	30	0	6

Source: self-elaborated, based on CONEVAL estimates for the multidimensional measurement of poverty in 2020.

poverty (Table 1) in the State of Puebla (13%) is higher than that found on a national scale (9%) and this is even more serious in the rural areas (16%) of the State, than in urban areas (12%).

Of the total number of people aged 65 and over, who receive support in the State of Puebla, only 7% are those living in extreme poverty, a pattern that is repeated in both rural and urban areas (Table 1). This has important implications, as it shows a low proportion of support distribution to the population that is in a critical situation of poverty, a condition that is repeated, regardless of whether the area is rural or urban, suggesting the need for a re-evaluation concerning prioritization and distribution of support.

Regarding social deficiencies, these were greater among the rural population (23%) than the urban population (16%); however, the differences in social deficiencies between the beneficiary population in rural areas (42%) and urban areas (20%) were much greater.

An important indicator for understanding the economic stability of the population is income vulnerability, which at the state level was 8%, implying that this percentage of the population has income above the poverty line, but this is still insufficient to ensure complete economic stability. Notably, income vulnerability is the same (7%) at the state level, both for beneficiaries and non-beneficiaries of the PPBAM, but it differs between urban (10%) and rural areas (0%), indicating that assistance programs can have varying impact depending on their destination, explained by the higher cost of living in urban areas. It is notable that only 13% of the State's population is neither poor nor vulnerable; a much higher percentage in urban areas (15%) than in rural areas (4%); both percentages increase among PPBAM beneficiaries, both urban (19%) and rural (6%) (Table 1).

Regarding lack of social security among the population aged 65 and over in the State, 58% of the urban population and 42% of the rural population suffer from this lack. Although there are more opportunities for jobs with social security in urban areas, a large number of people work in the informal economy and do not qualify. However, in rural areas, where social security coverage derived from employment is even more limited, this situation is partly compensated by greater coverage by social programs, such as the Pension Program for the Well-being of Older Adults (PPBAM).

18% of the population in this state that received a pension or retirement fund also received benefits from the PPBAM, and 23% of non-pensioners/retirees, received resources from this program, which indicates a significant difference between these groups. Thus, the probability that a pensioner over 65 years of age received support from the program was 4%, whereas, for a person in this same group who is not pensioned, the probability of receiving support from the PPBAM was 18%.

Regarding social deficiencies (Table 2), it was found that 80% of the general population suffers from at least 1 deficiency, compared to 76% of the population aged 65 and over. However, the differences widen between beneficiaries and non-beneficiaries of PPBAM, as the latter have greater educational deficiency and less access to social security. This difference is aggravated in rural areas, as they suffer from the highest percentages in terms of all deficiencies, so it is necessary to focus more on these areas. PPBAM beneficiaries have the lowest percentage in terms of lack of access to nutritious and quality food.

A Probit model was estimated in order to evaluate the effects of the program, finding a pseudo R^2 of 0.2538 that indicated a relatively good fit for this type of model. This result is supported by the Wald X^2 value, which was 183.77, with a p-value of 0.0000, indicating that the Probit model has a statistically significant fit. Notably, all the coefficients obtained were significant at 5%, with the exception of the X_1 variable that refers to rural/urban area (Table 3). It was found that the variables that reduce the probability of living in poverty are PPBAM support, pensions, higher educational level, and age. However, a man and living in a larger household is more likely to live in poverty.

The marginal effects indicate that being a PPBAM beneficiary reduces the probability that a person in this State lives in poverty by 8.44 percentage points ($p=0.02$), that is, people aged 65 or older who receive PPBAM have a 46.48% probability of falling into poverty, whereas people who do not receive it have a 54.81% probability. In rural areas, the probability that a person aged 65 or older lives in poverty, was lower (42.77%) if they receive PPBAM support,

Table 2. Social deficiencies among the population, depending on type of location in Puebla, 2020.

Level	Characteristic	At least one deficiency (%)	Three or more deficiencies (%)	Lack of education (%)	Access to health services (%)	Access to social security (%)	Quality and size of home (%)	Access to basic living conditions (%)	Access to nutritious and quality food (%)
Status	General	80	33	23	32	69	10	26	31
	Over 65 years	76	37	59	27	45	72	28	25
	PPBAM	79	26	72	21	0	80	32	26
	No PPBAM	74	41	56	28	57	79	28	25
Urban	General	75	27	20	32	62	7	17	31
	Over 65 years	68	27	50	22	37	5	16	23
	PPBAM	71	20	66	16	0	6	19	27
	No PPBAM	67	28	45	24	47	5	15	22
Rural	General	94	47	31	33	86	18	50	30
	Over 65 years	94	63	82	38	63	13	58	30
	PPBAM	94	37	84	30	0	12	58	24
	No PPBAM	94	71	81	39	83	13	58	32

Source: self-elaborated, based on CONEVAL estimates for multidimensional measurement of poverty in 2020.

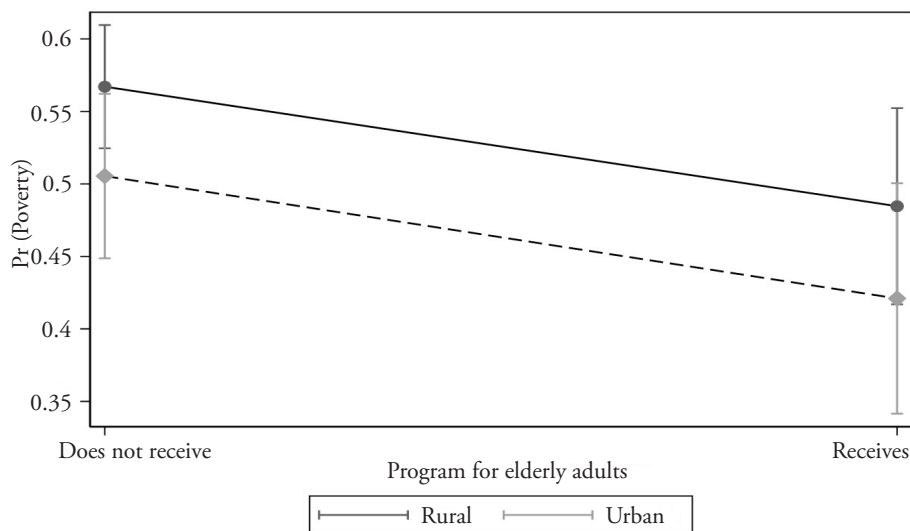
Table 3. Coefficients and robust standard errors for the Probit model, to estimate the probability of living in conditions of poverty.

Variables	Coef.	Robust Std. Err.	Z	P>z	[95% Conf. Interval]
Area (X_1)	-0.211	0.122	-1.720	0.085	-0.451 0.029
Gender (X_2)	0.240	0.113	2.130	0.033	0.019 0.461
Receives PPBAM (X_3)	-0.269	0.132	-2.030	0.042	-0.528 -0.010
Receives pension (X_4)	-0.871	0.145	-5.990	0.000	-1.157 -0.586
Complete primary or incomplete secondary school (X_5)	-0.866	0.137	-6.310	0.000	-1.135 -0.597
Complete secondary or incomplete high school (X_6)	-1.017	0.208	-4.890	0.000	-1.425 -0.610
Complete high school or higher education (X_7)	-2.236	0.280	-7.970	0.000	-2.786 -1.687
Age (X_8)	-0.018	0.007	-2.540	0.011	-0.033 -0.004
Size of household (X_9)	0.134	0.036	3.690	0.000	0.063 0.204
_constant	1.676	0.559	3.000	0.003	0.581 2.771

Source: self-elaborated, based on CONEVAL estimates for multidimensional measurement of poverty in 2020.

compared to those who do not receive this support (50.71%). In urban areas, the probability of living in poverty was also lower for those who received PPBAM support (49.01%), compared to those who did not receive support (56.76%) (Figure 1).

The analysis for probability comparison shows that people with pensions, who also receive the PPBAM are 5.52% percentage points less likely to be poor



Source: self-elaborated based on CONEVAL estimates for the multidimensional measurement of poverty in 2020.

Figure 1. Poverty predictions considering PPBAM transfers; comparing rural and urban areas.

than those who do not receive the transfers, while non-pensioned people who receive the PPBAM are 8.59 percentage points less likely to be poor.

Additionally, when evaluating the difference in the probability of living in poverty between those who do and do not receive the program in urban areas, it was found that receiving the program's support is associated with a 7.9% reduction of the probability of living in poverty in urban areas ($p=0.0277$); whereas in rural areas, the program is associated with a 9.7% reduction of the probability of living in poverty ($p=0.0314$). The results highlight the importance of PPBAM in reducing poverty among people over 65 years of age in the geographic areas studied.

When analyzing by gender, applying probability comparison, receiving the program reveals an associated increase of the probability of living in poverty of 0.88% among men, compared to women ($p=0.04$), implying that the program's impact is differentiated by gender. In rural areas, women who do not receive the program transfers have a 47.83% probability of falling into poverty, whereas women who receive the PPBAM have a 39.89% probability. In the case of men, who do not receive the program transfers, the probability of being poor was 54.77%, while if they receive transfers, it is 53.12%. This reveals that the PPBAM contributed to reducing the probability of women being in poverty in rural areas to a greater extent than men; possibly because women, especially in rural areas, tend to be in situations of greater economic vulnerability and the program may cover their needs better. In urban areas, the probability of being poor for a woman, without receiving the program's transfers was 53.95% and with the support of PPBAM, this decreased to 46.12%. For men, the probability of being in poverty without the program's resources was 60.59% and with PPBAM transfers, this probability decreased to 53.12%.

DISCUSSION

Huenchuan (2018) indicates that social protection systems aimed at older people must seek the autonomy of participants, guaranteeing a minimum level of income security, in addition to health systems and social services. In this sense, the PPBAM seeks to ensure a minimum level of social protection, by means of non-contributory pensions that are universal, in order to combat persistent gaps in treatment, denial of rights and degrading stereotyping of older adults, placing special emphasis on people in this age group, who live in conditions of poverty, vulnerability and marginalization. In this context, the number of people aged 65 or older in the country has been increasing, generating increased demand for economic resources from the PPBAM. Of this population, 54% are women; this reflects the life expectancy associated with physical or physiological characteristics, combined with gender associated lifestyles (National Institute of Women-INMUJERES, 2015).

Reasons explaining why a higher percentage of the PPBAM is allocated to women in urban areas of the State are many and diverse, but the following factors are notable; the fact that they live longer, there is a greater probability of female single-person family structures in this context, fewer community networks, lower participation of older women involved in the labor market, as they undertake unpaid care work, and because in cities, men have greater access to the contributory support system. An example of this is that at a national level, 23% of women have access to a contributory pension, compared to 40% of men who have formal employment (Comisión Nacional del Sistema de Ahorro para el Retiro (CONSAR, 2018).

Of the total number of older adults in the country, 77.1% live in urban areas, compared to 22.9% in rural areas; this aspect is important because it relates closely to the existence of poverty, as in rural areas, nearly half of the population aged 65 or over were living in poverty (50.7%), whereas in urban areas, it was much lower (34.1%) (CONEVAL, 2020). When compared with the results obtained throughout the State, apparently, these are higher in both rural and urban areas, reaching 61% and 50% respectively. This makes it essential that older people have sufficient support and coverage to guarantee adequate access to basic services and fulfillment, according to their stage of life requirements.

In this regard, Sánchez and Rodríguez (2018) mention that in 2018, intervention on the part of the program for Older Adults (PAM), decreased the poverty rate of older adults residing in rural areas, more than for those in urban areas. This outcome coincides with the results obtained for the State of Puebla in 2020, where for rural areas; the reduction in poverty was 9.7 percentage points, compared to 7.9 percentage points in urban areas. This may imply that resources are being allocated more effectively in rural areas. Results from this research coincide with those indicated by Barrera *et al.* (2022), who argue that, taking an estimate of the income from non-contributory pensions, they found a positive effect on poverty levels, as a result of the gradual increase in the amounts granted, ensuring that no household lacks income and that all exceed the minimum welfare levels, both in rural and urban areas.

According to Rodríguez (2021), contributory pensions are positively associated with educational levels, living in urban areas and being a man, meaning that the most vulnerable population sector is women who live in rural areas and have few years of schooling. This is derived from the fact that social security coverage is associated with the traditional family model, which assumes the existence of a male provider, who by means of benefits derived from employment, provides coverage to his wife and children, meaning that fewer women have social security (Damián, 2016:165). In this sense, Sánchez and Rodríguez (2018), point out when analyzing the impact of the PAM by

social groups, and in terms of gender, men appear to benefit more from these transfers.

In contrast, Juárez and Rodríguez (2021) found that PAM transfers had positive and statistically significant effects on the subjective well-being of older women, although not on that of older men. In this research, evidently PPBAM resources were distributed considering gender differences, as shown by data from the Ministry of Welfare (2022), where transfers at the national level for women represented 55.5%, whereas for men, 44.4%. According to the results obtained for the State of Puebla in rural areas, trends were observed that suggest a greater reduction in poverty levels among women, compared to men, partly because of PPBAM transfers.

However, we emphasize that these differences are not exclusively due to the effects of the program, as other socioeconomic and contextual factors can influence the results, such as the fact that women in rural areas often face higher levels of economic vulnerability, with limited access to formal employment and economic resources, making them more dependent on social support, such as PPBAM, to improve their living conditions. Another aspect that must be taken into account is the gender structures in rural communities, where women tend to be assigned the role of caregiver and represent those responsible for the home, which can make their needs more critical, meaning the transfer of resources to women can have a multiplier effect, as they tend to prioritize spending on health, education and food for their families, with more effective use of resources to address deficiencies.

In a work carried out by Lozada (2023) for the State of Puebla, the effects of the PPBAM were analyzed by applying a logistic model, using variables other than those used in this research. Here with respect to gender, she found that being a woman in the State decreases the probability of poverty by 4.8%, compared to men, a result that does not coincide with other research, suggesting that women are more likely to be in poverty. The same occurs with the rural variable, where she observed that living in a rural area decreases the probability of being poor; a finding that is not consistent with other research. Thus, these results require further study, because they may reflect a diverse combination of contextual factors, both in terms of program implementation and specific socio-economic dynamics of the State. In 2020 in particular, important changes were implemented in terms of the increase in the allocation and distribution of PPBAM resources, as the resources provided by the social programs promoted in the country increased 30 times from 2018 to 2020. This caused the percentage of people aged 65 and over, who only received a non-contributory pension to increase significantly, from 0.03% in 2016 to 1.1% (CONEVAL, 2020).

CONCLUSIONS

Results indicate that the percentage of PPBAM coverage in rural areas was higher than in urban areas, with the State of Puebla attaining a level of coverage similar to the national average. When analyzing the distribution of resources by gender within the State, apparently women in urban areas received a higher proportion of PPBAM transfers than those in rural areas.

Notably, although the Probit model allows for the evaluation of the relationship between variables, it does not guarantee the identification of causal effects. Thus, it cannot be stated that the program is the direct cause of the observed reduction in poverty, as there may be other uncontrolled factors that influence the results. Another aspect that this methodology failed to consider is the individual differences that can influence the probability of being or not in poverty conditions, possibly leading to biased results.

Despite these restrictions, it can be concluded that the PPBAM program shows a significant association with poverty reduction, although differences persist in coverage and resource allocation by gender and geographic location. The results indicate that the program has benefited the most vulnerable groups to a greater extent, especially women in rural areas, possibly because of their greater economic vulnerability or to differences in household structure and gender roles. In urban areas, both women and men have experienced a significant decrease in the probability of being in poverty, thanks to support from the program.

Likewise, there is a need to conduct studies that focus on the aspect of social deficiencies, as according to what has been reviewed, this is ultimately the context where the effects of social programs are reflected; related to the quality of life, undoubtedly incorporating variables such as education, health, housing and social security. In this sense, evidently differences in terms of deficiencies in rural/urban spaces continue to be significant.

Likewise, it is essential that these investigations, based on scientific evidence permeate social policy. This will make it possible to propose strategies that from now on, contribute to reducing the discouraging effects of old age in the country. Given this scenario, it is suggested that a greater proportion of resources be assigned to people who live in conditions of extreme poverty, which implies prioritizing the allocation to rural areas, reinforcing this program together with complementary programs, in order to address priority social deficiencies, according to the specific area of intervention.

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